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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/680,549

10/07/2003

Kamal Jain

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EXAMINER

AJIBADE AKONAI, OLUMIDE

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

02/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--|------------------------------------|--|
| Office Action Summary | Application No. 10/680,549 | Applicant(s) JAIN ET AL. | |
| | Examiner Olumide T. Ajibade-Akonai | Art Unit 2617 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2003 and 26 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments see pages 5-8 of the remarks, filed 16 November 2007, with respect to claims 1, 2 and 5-18 have been fully considered and are persuasive. The 35 U.S.C. § 103(a) rejection of claims 1, 2 and 5-18 has been withdrawn.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1 ~~8~~ and ~~5~~ 18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 18 of copending Application No. 11/474666 in view of **Sengoku et**

**al "Cellular Mobile Communication Systems and a Channel Assignment
Using Neural Networks".**

Regarding claim 1, claim 1 of U.S. Patent application 11/474666 includes all the limitations of claim 1 of the instant application as follows: a method of modeling wireless interference among wireless links between a plurality of wireless nodes in a wireless network, the method comprising: accepting connectivity information for the network; identifying wireless links between nodes of the network from the connectivity information; and creating a graph from the connectivity information, wherein each identified link is represented as a vertex in the graph if the wireless links interfere with each other.

However, claim 1 of U.S. Patent application 11/474666 does not disclose the following limitations: a direction is assigned to the edge, and a weight is assigned to the edge, the weight being equal to a fraction of a maximum permissible noise at a link corresponding to the second vertex contributed by activity on the link corresponding to the first vertex. In analogous art, Sengoku et al discloses a direction is assigned to the edge (edge set $e_k = (v_i, v_j)$, see page 412, col. 2), and a weight is assigned to the edge ($w(v_i, v_j)$, see page 412, col. 2), the weight being a weight equal to a fraction of a maximum permissible noise at a link (edge weight, see page 212, col. 2) corresponding to the second vertex contributed by activity on the link corresponding to the first vertex (see page 212, col. 2).

It would therefore have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify U.S. Patent application

11/474666, by creating an interference network with a vertex set V and edge set E , and assigning a weight to the edge, the weight representing an interference between cells, for the benefit of creating an interference model for a channel assignment algorithm in a cellular network.

Regarding claim ¹⁸1, claim ¹⁸2 of U.S. Patent application 11/474666 includes all the limitations of claim ¹⁸1 of the instant application as follows: a computer-readable storage medium containing computer-executable instructions for modeling wireless interference among wireless links between a plurality of wireless nodes in a wireless network, the computer-executable instructions performing steps comprising: accepting connectivity information for the network; identifying wireless links between nodes of the network from the connectivity information; and creating a graph from the connectivity information, wherein each identified link is represented as a vertex in the graph, if the corresponding wireless links interfere with one another.

However, claim ¹⁸1 of U.S. Patent application 11/474666 does not disclose the following limitations: a direction is assigned to the edge, and a weight is assigned to the edge, the weight being equal to a fraction of a maximum permissible noise at a link corresponding to the second vertex contributed by activity on the link corresponding to the first vertex. In analogous art, Sengoku et al discloses a direction is assigned to the edge (edge set $e_k = (v_i, v_j)$, see page 412, col. 2), and a weight is assigned to the edge ($w(v_i, v_j)$, see page 412, col. 2), the weight being a weight equal to a fraction of a maximum permissible noise at a link (edge weight, see page 212, col. 2)

corresponding to the second vertex contributed by activity on the link
corresponding to the first vertex (see page 212, col. 2).


It would therefore have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify U.S. Patent application 11/474666, by creating an interference network with a vertex set V and edge set E , and assigning a weight to the edge, the weight representing an interference between cells, for the benefit of creating an interference model for a channel assignment algorithm in a cellular network.

This is a provisional obviousness-type double patenting rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olumide T. Ajibade-Akonai whose telephone number is 571-272-6496. The examiner can normally be reached on M-F, 8.30p-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Rafael Perez-Gutierrez
Supervisory Patent Examiner
Technology Center 2600
Art Unit 2617
2/14/02

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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2/14/09